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TROPICAL FOREST NOTES



TROPICAL FOREST RESEARCH CENTER *
RIO PIEDRAS, PUERTO RICO

THE SERVICE LIFE OF UNTREATED POSTS IN PUERTO RICO
AFTER ONE YEAR IN TEST

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In April 1959, treated and untreated posts of the more common species in Puerto Rico were set in the ground to determine their service life. A total of 52 tree species and one bamboo species were set at the Cambalache Forest which is located in the north central part of the Island near sea level, and 10 species were set at the Guavate Forest, in the southeastern part of the Island at an elevation of 2300 feet. Twenty duplicate posts of a treatment were set at each location¹. All posts were 6 feet long with a top diameter of two to three inches. They were peeled and set 18 inches in the ground. This note gives the condition of the posts after one year of service life.

No deterioration was observed in any of the treated posts after one year, but many of the untreated posts had failed. While it is generally known that untreated posts of most species last only a year or two, their relative rating and actual service life have not been determined. This information should prove useful to farmers and others interested in determining the service life of fences constructed of untreated posts.

Information was obtained on the condition of all posts at three month's intervals. All twenty replicate posts of a few species failed within a year's time, and the service life shown for them was the actual life. The estimated service life of those species with four to nineteen failures was obtained from mortality tables. The average service life is not shown for those species with three failures or less.

Decay fungi was responsible for most of the failures and the deterioration of the still serviceable posts, although termites contributed to these failures and deterioration at Cambalache. No termite attack was observed in any post at Guavate. Termites apparently are less common in the high rainfall areas of the mountains, and the absence of termites at Guavate may contribute to the fact that some species there have a slightly longer service life than similar species set at Cambalache.

The density of the various species, in pounds per cubic foot, and based on air-dry weight and volume at approximately 18 percent moisture content, is given in the table to show its relationship to service life. Density was not a criterion of service life, except that very light-wooded species failed within one year.

¹ A summary of the results of the treatments is given in the Tropical Forest Note No. 2 "Preservation of Puerto Rican Fence Posts Treated by Cold Soaking and the Hot-and-Cold Bath Method", January, 1960.

* Operated in cooperation with the University of Puerto Rico.



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Table 1.--Condition of untreated six-foot posts with top diameters from 2.1 to 3.1 inches after 1 year exposure at the Cambalache and Guavate Forests, Puerto Rico

Common name	Species	Scientific name	Condition of posts									
			Estimated		Removed because of		Serviceable but affected by					
			average	life	Density ^{1/}	Decay	Termites	Decay	Termites	Decay		
YEAR												
lbs/ft ³												
Percent												
Almácigo	Bursera simaruba (L.) Sarg.	.6	20	90	0	10	--	--	--	--		
Yagrumo hembra	Cecropia peltata L.	.7	17	70	0	30	--	--	--	--		
Achiotillo	Alchornea latifolia Sw.	.9	26	50	0	50	--	--	--	--		
Palo de gallina	Alchorneopsis portoricensis Urban	.9	26	80	0	20	--	--	--	--		
Muñeco	Cordia borinquensis Urban	.9	38	40	0	60	--	--	--	--		
Moral	Cordia sulcata DC.	.9	32	35	0	55	10	0	0	0		
Yagrumo macho	Didymopanax morototoni (Aubl.) Dec. & Pl.	.9	21	65	0	35	--	--	--	--		
Tulipán africano	Spathodea campanulata Beauv.	1.0	17	75	0	20	5	0	0	0		
Espino rubial	Zanthoxylum martinicense (Lam.)	1.1	33	40	0	45	5	0	5	5		
Rabo de ratón	Casearia arborea (L. C. Rich.) DC.	1.1	43	60	0	30	5	0	5	10		
Laurel avispillo	Nectandra coriacea (Sw.) Griseb.	1.2	33	35	0	35	5	5	5	10		
Tabaiba	Sapium laurocerasus Desf.	1.2	35	10	5	65	5	0	0	10		
Cassia de Siam	Cassia siamea Lam.	1.3	42	30	0	30	20	10	5	5		
Guaraguao	Guarea trichilioides L.	1.3	34	30	0	35	20	0	0	10		
Mangle blanco	Leguncularia racemosa (L.) Gaertn. f.	1.3	44	10	20	30	5	20	15	15		
Mantequero	Rapanea ferruginea (Ruiz & Pav.) Mez	1.3	42	5	0	55	0	15	20	20		
Casuarina	Casuarina equisetifolia L.	1.4	57	15	0	35	15	13	25	25		
Jagüey	Ficus laevigata Vahl	1.4	34	30	0	20	30	0	5	5		
Palo de matos	Ormosia krugii Urban	1.4	35	20	0	30	10	15	20	20		
Laurel geo	Ocotea leucoxylon (Sw.)	1.4	31	15	0	35	5	0	25	25		
Moca	Andira inermis (W. Wright) H.B.K.	1.5	45	25	0	20	25	15	5	5		
Granadillo	Buchenavia capitata (Vahl) Eichl.	1.5	41	25	5	10	20	10	5	5		
Bambú	Bambusa vulgaris Schrad.	1.5	--	40	0	5	40	0	0	0		
Sabinón	Croton poecilanthus Urban	1.5	43	10	0	30	10	15	25	25		
Tabonuco	Dacryodes excelsa Vahl	1.5	35	10	5	20	25	10	5	5		
Pomarrosa	Eugenia jambos L.	1.5	45	10	0	35	5	15	25	25		
Eucalyptus	Eucalyptus robusta J. A. Smith	1.5	33	15	5	5	10	20	20	20		
Guaba	Inga vera Willd.	1.5	40	25	0	15	25	10	20	20		
Masa	Tetragastris balsamifera (Sw.) Kuntze	1.5	44	15	0	20	0	15	40	40		
Cacao motillo	Sloanea berteriana Choisq.	1.6	53	15	0	15	5	15	25	25		
Uvilla	Coccoloba diversifolia Jacq.	1.7	46	15	5	5	20	20	15	15		
Aguacatillo	Meliosma herbertii Rolfe	1.7	30	25	0	0	30	5	0	0		
Almendra	Terminalia catappa L.	1.7	32	5	0	20	35	5	10	10		
María	Calophyllum brasiliense Camb.	1.8	38	0	0	20	20	20	20	20		
Péndula	Citharexylum fruticosum L.	1.8	46	10	0	10	20	0	30	30		
Guamá	Inga laurina (Sw.)	1.8	45	5	0	15	35	10	20	20		
Teca	Tectona grandis L. f.	1.8	35	10	0	10	20	10	10	10		
Mangle colorado	Rhizophora mangle L.	--	52	0	0	5	50	0	0	5		
Roble	Tabebuia heterophylla (DC.) Brit.	--	41	0	0	0	30	10	10	10		
Capá blanco	Petitia domingensis Jacq.	--	49	0	0	0	10	10	0	0		
Mangle prieto	Avicennia nitida Jacq.	--	53	0	0	0	10	20	10	10		
Maricao	Byrsinoma spicata (Cav.) Rich.	--	44	5	0	0	10	10	10	5		
Camasey jusillo	Calycogonium squamulosum Cogn.	--	49	0	0	0	25	25	0	0		
Cucubano	Guettarda scabra (L.) Vent.	--	47	0	0	15	25	10	30	30		
Caracolillo	Homalium racemosum Jacq.	--	50	5	0	0	25	0	20	20		
Hueso blanco	Linociera domingensis (Lam.)	--	53	0	0	10	25	5	0	0		
Ausubo	Manilkara bidentata (A. DC.) Chev.	--	54	0	0	0	15	25	25	25		
Hoja menuda	Myrcia coriacea DC	--	44	0	0	0	10	20	20	15		
Negra lora	Metayba domingensis (D. S.) Radlk.	--	47	0	0	0	30	10	5	5		
Calmítillo verde	Micropholis garcinifolia Pierre	--	48	0	0	5	10	5	5	5		
Calmítillo	Micropholis chrysophylloides Pierre	--	52	10	0	0	20	20	25	25		
Camasey blanco	Miconia spp.	--	48	15	0	0	15	5	10	10		
Cieneguillo	Myrcia deflexa (Poir.) DC.	--	59	0	0	0	35	5	5	5		
SET AT GUAVATE												
Rabo de ratón	Casearia arborea (L. C. Rich.)	1.1	43	90	0	0	10	0	0	0		
Pomarrosa	Eugenia jambos L.	1.5	45	35	0	0	55	0	0	0		
Mangle blanco	Leguncularia racemosa (L.) Gaertn. f.	1.5	44	45	0	0	50	0	0	0		
Laurel geo	Ocotea leucoxylon (Sw.)	1.6	31	30	0	0	55	0	0	0		
Guaba	Inga vera Willd.	1.7	40	25	0	0	65	0	0	0		
Casuarina	Casuarina equisetifolia L.	--	57	15	0	0	75	0	0	0		
Guamá	Inga laurina (Sw.)	--	45	15	0	0	80	0	0	0		
Hoja menuda	Myrcia coriacea DC	--	44	5	0	0	30	0	0	0		
Camasey blanco	Miconia spp.	--	48	15	0	0	25	0	0	0		
Roble	Tabebuia heterophylla (DC.) Brit.	--	41	5	0	0	50	0	0	0		

^{1/} Air dry weight and volume at approximately 18 percent moisture content.